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Amendment Dated: September 22, 2005
Reply to Office Action Dated: August 22, 2004

III.   REMARKS

4.   The Office Action dated August 22, 2005 has been carefully considered.

Reconsideration of this application, in view of the following remarks, is respectfully requested.

A.   References

5.   The following U.S. patents were considered in the office action:

* US Patent No. 5,619,995, Lobodzinski, filed April 15, 1997,

  ("Lobodzinski " or "Lobod" for short)

* US Patent No. 5,046,027, Taffe et al., filed September 3, 1991

B.   Overview of Office Action

6.   The office action rejected claims 1-35 in view of Lobodzinski (U.S. Patent

No. 5,619,995).

IV.   CLAIM REJECTIONS UNDER 35 U.S.C. 102

7.   The office action rejected claims 1-35 as being anticipated by Lobod.

C.   Office Action Persuasive in Part

8.   The applicant has considered the arguments made in the office action and

appreciates the clarification of the examiners point of view. Upon further review of Lobod in its

entirety, applicant acknowledges that Lodod teaches or at least suggests some of the elements of

the claims; however not all the elements of applicant's invention are clearly taught or suggested.

9.   In response, Applicant has review all of the claims, removed arguments that

regarding elements that are arguably suggested by Lobod, and provided new, more focused

arguments on those elements which are still missing. Reconsideration is requested based on

these new arguments.

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D.   What Lobod Does Teach

10.   Lobod describes a Motion Video Transformation System 100 ("MVTS") which includes a medical test source device 17 and a computer 6 connected to a network interface 11 which would allow computer 6 to act as a transmitter of compressed video over a network.

11.   Lobod is less clear in its teaching regarding the structure and operation of a receiver. Lobod indicates that network interface 11 facilitates the "exchange of compressed video and audio data over either Local and Wide Area Networks (LAN/WAN)." (Lobod col 9, lines 37-39). The Lobod drawings have no figure that shows a transmitting computer and a receiving computer communicating over a network. The Lobod specification does not clearly teach any structure for a remote receiver, so applicant looked to the claims which simply provide a "remote computer" which is a distinct element from computer 6, "wherein said remote computer has access to all functions available on said computer" (claim 7) or "wherein a remote computer has access to all functions available on said motion video transformation system" 100 (claim 15).

12.   Lobod also teaches that the computer 6 in motion video transformation system 100 provides various displays including a live video stream Fig 8 and conventional video recording and playback buttons (record button 64, a stop button 68, fast rewind 61, single frame back 62, pause 63, fast forward 66, single frame forward 73 and loop 67 functions). Further, Lobod has a vague reference to "manual start and end of a video sequence" (Lobod col 12, lines 18-19"); however one of skill in the art would have understood this to be conventional cropping of a sequence of one or more heart cycles to form a cineloop, a small video.

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13. Thus, while Lobod doesn't clearly teach a receiver it does teach the concept

of video transmission over a network and, when the claims are considered, a computer that has

access to the functions on the transmitting computer 6.

E.   **Lobod Teaches that Video Transmission is Limited by Bandwidth**

14. Lobod teaches that relative high bandwidth is needed to transmit video,

especially real-time compressed video. "Because the bandwidth of diagnostic video after

compression is significantly reduced (1.5 to 10 megabits per second (Mbps) depending on the

compression method used by the VP 1), a network transmission of digital diagnostic video is

possible over either local or wide area networks. The performance of digital video transmission

over the network depends on the network operating system and the bandwidth of the link. A

bandwidth of 15 Mbps (e.g. Ethernet protocol) is sufficient for real-time compressed video

transmission." (Lodod col 14, lines 12-21). *Here Lobod points out the problem that applicant's*

invention solves, but Lobod did not provide a solution.

F.   **Applicants Invention Solves a Problem that Lobod Does not Solve**

15. Lobod points out that (pre-recorded, pre-processed) compressed video

requires 1.5 to 10 Mbps of bandwidth and that real-time compressed video requires 15 Mbps,

specifically "Ethernet" LAN, for transmission. This presents a problem for a physician

attempting to provide remote diagnosis who is not connected by an Ethernet LAN or who is on a

busy hospital network where the required bandwidth is be consumed with other large data

transmission. This is exactly the problem being addressed by applicant's invention (a solution

which was not taught or suggested by Lobod).

16. Applicant's invention provides for a novel first, low-resolution storage-

efficient format, preferably 150 K bytes per second, which is substantially less than the 15 Mbps

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(or 1.5- 10 Mbps) as required by Lobod. Applicant's invention also provides for a second,

enhanced, high-resolution format which requires 2.5 Mbytes second, which is analogous to the

only level of resolution taught by Lobod. In applicant's invention, the novel low-resolution

video is transmitted first allowing the remote user to determine sections of interest. In some

embodiments, the user is able to mark the beginning and ending of one or more sections of

interest and explicitly request that only that section of the video be transmitted in the slower but

higher resolution format. The user is able to continue review of the video in the first format, or

other enhanced segments, while the slower video is been transmitted.

      17. "The storage-efficient format in which the video frames of a movie are first

transmitted from the transmitting device 103 or the server 150 to the receiving device 106 is a

low resolution format which allows the video frames to be transmitted much faster between the

transmitting device 103 or the server 150 and the receiving device 106. In the preferred

embodiment of the present invention, the storage-efficient format requires 150 kbytes per

second. The storage-efficient format is a trade-off between speed and quality. Frames in this

format can be transferred faster than in the high-resolution format, but the quality of the frames,

when displayed, is poorer, due to the lower resolution." (Specification page 14, lines 16-23).

      18. "The enhanced, high-resolution format in which marked sections of interest

are transmitted from the transmitting device 103 or the server 150 to the receiving device 106

takes longer to transmit than frames within the storage-efficient format. However, when

displayed, the quality of frames in the enhanced, high-resolution format is much greater than in

the storage-efficient format. In the preferred embodiment of the present invention, the enhanced,

high-resolution format requires 2.5 Mbytes per second."

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19. "Used together, the storage-efficient format and the enhanced, high-resolution format allow a user to quickly and effectively determine sections of interest within the movie where they would like to see frames in the enhanced format. The storage-efficient format allows the video frames within the movie to be transmitted to the receiving device 106 faster to give the user an opportunity to watch the movie at the receiving device 106 and determine and mark sections of interest within the movie. The frames between the marked sections of interest are then sent in the enhanced, high-resolution format and stored with the movie to replace the relevant frames. The user can view these enhanced, high-resolution frames within the sections of interest. In this manner, the entire movie is not sent in the enhanced format, but only the frames within the sections of interest. A local copy of the movie is stored at the receiving device 106 which includes the enhanced, high-resolution frames within the sections of interest, and frames in the storage-efficient format in the remaining portions of the movie." (Specification page 14, line 27 through page 15, line 16.)

G.   Functions for Supporting Requests for Enhanced Transmission

20. Because Lobod did not anticipate two levels of compression, low and high, for the same video, or means for requesting the high-resolution ("enhanced") version after viewing the low-resolution version, Lobod did not anticipate or suggest functions for supporting such requests or for storing the results in a hybrid format. Applicant's invention teaches various novel means for selection and request for transmission of its sections of interest. Applicant discloses a novel "enhance function" which is not taught or suggested by Lobod. "When the user then activates an enhance function, the frames within the marked sections of interest are sent from the server or transmitting device to the receiving device in an enhanced, high-resolution format for viewing by the user at the receiving device." (Specification page 8, lines 3-6).

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21. Further applicant teaches "mark-in", "mark-out", "skip to next mark" and "skip to previous mark" functions that can be activated by the user to specify the sections of interest and to skip to the enhanced sections during playback.

22. "The receiving device 106 also includes a mark-in function, used to establish a beginning or in-point of a section of interest within a movie to be transferred, and a mark-out function, used to establish an end or outpoint of the section of interest to be transferred. The receiving device 106 also includes an enhance function which is used to request from the transmitting device 103 or the server 150, an enhanced, high-resolution copy of the frames between the in-point mark and the out-point mark, denoting the section of interest previously established by the user. As discussed above, the receiving device 106 also includes transport control functions such as play, pause, fast-forward, reverse-play, rewind, skip to next mark and skip to previous mark, which are used to control the display of frames within the movie being displayed." (Specification page 13, lines 19-28).

23. In another embodiment the section of interest is automatically determined and the request of enhancement is automatically sent. "In an alternate embodiment of the present invention, the system automatically enhances the current image or section of images. In this embodiment, if the user lingers on a particular frame or group of frames for more than a predetermined time period, then the system automatically transmits the enhanced, high-resolution version of the frame or group of frames." (Specification page 15, lines 23-26).

H.   Network Server

24. Applicant's invention further teaches a novel server which is connected via the network (Fig 2, 150) to the transmitter 103 and its video source 101. The server can store

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videos and re-transmit them with all the functions of the transmitter 103 but without having to be have a expensive medical device video source 101.

I.   Lobod Misunderstood: Video Signal 14 is not "First Format"

25. Further, the reference does not teach certain things that the office action relies on it to teach. In Lobod, the video source 17 generates a video signal 14 which is processed by the video processor 1 which is part of the MVTS 100. This video signal is not a "first format" as required by applicant's claims (see discussion above). The video signal 14 is an uncompressed, full resolution video signal (Fig 3, items 40, 41, 42, 43); it has not yet been encoded or compressed by the VT 47. This is not the same as applicant's first format which is highly compressed, low resolution version of the video. Further, video signal 14 never reaches a receiver, but is processed by the transmitter (i.e. MVTS 100) where it is compressed and later transmitted to a "remote computer" in a compressed format. Lobod does not teach two distinct formats that are transmitted from a transmitter to a receiver over a network.

J.   Lobod Misunderstood: Physiological Index or Markers Not the Same As Marked Portion

26. Lobod discloses Physiological Signal Acquisition 5 circuit that processions physiological signals such as ECG, blood pressure, and blood flow which are used to index physiological events to frames of the video. These markers are not the same as the "mark in" and "mark out" functions of applicant's invention, which are applied by a user for marking a portion of interest transmission in the second format, as required by independent claims 22 and 29. These markers are not the same as the "marked portion" as required by independent claim 1 or the "requested portion" as required by claim 13. The physiological markers are not the same as the automatic selection of video by lingering, as required by claim 11.

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K.   Lobod Misunderstood: Fig 7 Cardiac Cycle Synchronization Not Same as User Marking or Annotations

27. If reference to Fig 7, Lobod teaches how a video recording a heart cycle when the heart was beating slow (e.g. 1 Hz–1 beat per second=60 beats per minute) can be compared to video recording a heart cycle when the heart was beating fast (e.g. 2 Hz–2 beat per second=120 beats per minute). The slow heart cycle is captured on 30 frames (60 fields). The fast heart cycle is captured on 15 frames (30 fields). In order display the two cycles side by side, the two cineloops must be synchronized. Fig 7 shows how these are synchronized by skipping frames and change the rate at which the two sets of fields are displayed. While very interesting, this is not the same as applicant's "marking the marked portion of the video stream" (claim 7) or "adding annotations" (claim 10), as suggested by the office action.

L.   What Lobod Does NOT Teach

28. In order for Lobod to anticipate a claim of Applicant's invention it must teach each and every element of the claim. As discussed above, there are some elements that Lobod does teach or suggest, but there are still elements that are not taught, or not taught the same as Applicant's invention.

29. For example, Lobod does not teach the following:

- Two distinct levels of compressed video resolutions: a high level and a novel low level which requires a significantly lower bandwidth.

- First, transmitting the faster, low-resolution version of the video.

- A user function for requesting the high-resolution (or "enhanced") version of a video section of interest.

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- User functions for explicitly marking the beginning and ending of a section of

  interest to be transmitted in the slower, "enhanced" format.

- The ability to store both the enhanced sections with the low resolution video

  at the receiver.

- User function for skipping to forward and backward to enhanced sections.

- A network server that can store videos and perform the operations of

  transmitting and enhancing without having a video source.

30. Lobod fails to teach or suggest the details of the receiving device:

- Receiving the video stream of images in a first format (which is not the

  enhanced second format).

- Displaying the video steam of images for a user at the remote receiving device

  to mark one or more sections of interest.

- Transmitting a request back from the receiving device to the transmitting

  device for enhanced version of the sections of interest

- Received from the transmitting device the enhanced sections of interested in a

  second format which is an enhanced version of the first format.

- Storing the first format, and replacing the marked portion with video in the

  second format.

31. Further, the claims of the present invention requires at least two types of

storage devices: a storage device which is part of the transmitting device (e.g. claim 13) and a

received storage device (e.g. claim 26, see also claim 2). Lobod only teaches one storage device.

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V.   CLAIMS NOT ANTICIPATED OR RENDERED OBVIOUS BY LOBOD

M.   Independent Claims Not Anticipated or Suggested

32.   Notwithstanding, the elements that Lobod teaches, each of Applicant's

independent claims contain elements that Lobod does not teach or suggest. In order for a claim

to be anticipated the reference must clearly teach each and every element of the claim.

33.   Claim 1 requires "a *request for an enhanced* version *of a marked portion* of

the video stream [in a first format"" and "transmitting the marked portion…in a second format,

wherein the second format represents an enhanced version of the first format".

34.   Claim 13 requires "a controller…for controlling transmission… wherein the

stream of images are transmitted to the receiving device in a first format and then a *requested*

portion of the stream of images are transmitted to the receiving device in a second format, and

further wherein the second format represents an *enhanced* version of the first format".

35.   Claim 22 requires "a receiving device … to receive the video stream of

images in a first format, display the video steam of images for a *user to mark one or more*

sections of interest, transmit a *request for an enhanced* version of the sections of interest and

receive from the transmitting device the sections of interest within the video stream of images in

a second format, wherein the second format represents an enhanced version of the first format."

36.   Claim 29 requires "displaying the video stream of images in the first format

at the receiving device, allowing a *user to mark* sections of interest within the video stream of

images; and … transmitting the sections of interest to the receiving device in a second format,

wherein the second format represents an *enhanced* version of the first format.

37.   Each of these independent claims contain limitations that were not clearly

taught or even suggested by Lobod, especially in the way that they are taught by Applicant to

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solve a problem that was not solved by Lobod. Applicant submits that none of the independent

claims are fully anticipated by Lobod and thus each of the independent claims and their

independent claims are patentable over Lobod.

Claim 1 Not Anticipated or Rendered Obvious by Lobodzinski

38.   Regarding claim 1, Applicant respectfully disagrees with the Office Action's

conclusion that Lobod's computer 6 is a receiving device, but rather a transmitting device. The

only possible receiving device in Lobod is the "remote computer" of Lobod claims 7 or 15

(which is not shown in any figure and has no reference number). Both the first format and the

second format of Applicant's claim 1 must transmitted to the receiving device. As discussed

above, the first format of applicant's invention cannot be the raw video signal 14 (embodied as

NTSC/PAL 41, S-video 42, RGB 43, or unprocessed digital 40). Thus, Lobod only teaches

transmission of only one compressed format from the MVTS 100's internal computer 6 via the

network interface 11 to a receiver (the "remote computer").

39.   Further, Lobod does not clearly teach a "marked portion" or "receiving a

request for an enhanced version of a marked portion...wherein the second format represents an

enhanced version of the first format."

40.   Applicant submits that claim 1, as written, is allowable over Lobod.

Claim 2 Not Anticipated or Rendered Obvious by Lobodzinski

41.   Claim 2 is dependent on claim 1 and for all the reasons cited above should be

patentable.

42.   Regarding claim 2, Applicant respectfully disagrees with the Office Action's

conclusion that Lobod discloses "of storing the original video stream of images at the receiving

device". As explained above, Lobod fails to clearly teach the structure or function of receiving

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device. Therefore, it is not clear from Lobod that the remote computer has a "storage device"

that is configured to store portion of video in both a first and a second format. Arguably,

Lobod's "remote computer" could have been a display only computer and still meet the

teachings of Lobod. Therefore Lobod does not clearly teach each and every element of claim 2.

Claim 3 Not Anticipated or Rendered Obvious by Lobodzinski

43. Claim 3 is dependent on claims 1 and 2 and for all the reasons cited above

should be patentable.

44. Regarding claim 3, Applicant respectfully disagrees with the Office Action's

conclusion that Lobod discloses storing the marked portion of the video stream of images to

replace a corresponding portion of the original video stream of images". As explained above,

Lobod fails to clearly teach the two levels of compressed video, the ability to mark a portion to

be replaced, or even the ability to store the two formats at the receiving device.

Claims 4-5 Not Anticipated or Rendered Obvious by Lobodzinski

45. Claims 4 and 5 are dependent on claim 1 and should be allowable for all the

reasons stated regarding claim 1.

Claim 6 Not Anticipated or Rendered Obvious by Lobodzinski

46. Claim 6 is dependent on claim 1 and should be allowable for all the reasons

stated regarding claim 1.

Claim 7 Not Anticipated or Rendered Obvious by Lobodzinski

47. Claim 7 is dependent on claims 1 and 6 and should be allowable for all the

reasons stated regarding claims 1 and 6.

48. Regarding claim 7, Applicant respectfully disagrees with the Office Action's

conclusion that Lobod discloses "marking the marked portion of the video stream of images at

the receiving device". The "marked portion" has its antecedent in claim 1 where it is associated

with a "request for an enhanced version...of the first format". See discussion above regarding

the differences between physiological markers, frame indexes, and cardiac cycle synchronization

and the "marking" claimed by Applicant. Thus, what Lobod teaches is not the same as

applicant's marked portion.

Claim 8 Not Anticipated or Rendered Obvious by Lobodzinski

49. Claim 8 is dependent on claims 1 and 6 and should be allowable for all the

reasons stated regarding claims 1 and 6.

Claim 9 Not Anticipated or Rendered Obvious by Lobodzinski

50. Claim 9 is dependent on claims 1 and 6 and should be allowable for all the

reasons stated regarding claims 1 and 6.

51. Further, the Office Action strains to apply the limitations of claim 9 on the

system of Lobod. The office action cites to Fig 3's buffer 44 or video conversion 45, these

actions clearly take place in the MVTS 100 which is the transmitter not at the receiver. Fig 3 is a

block diagram of the VP 3 which compresses the video and passes it on to the computer 6.

Claim 9 requires complex operation at the receiving end that provides novel and useful benefits

to the user, namely being able to review received portions of the video received in the low

quality first format and being able to begin marking portions of interest prior to receiving the

entire video. These required elements of claim 9 are not taught or suggested by Lobod.

Claim 10 Not Anticipated or Rendered Obvious by Lobodzinski

52. Claim 10 is dependent on claim 1 and should be allowable for all the reasons

stated regarding claim 1.

53. Further, the annotations of claim 10 are added to the video stream of images, which refers back to the video that is being transmitted and received at the receiving end. The office action refers to Lobod Fig 7's cardiac cycle synchronization, which has been misunderstood and misapplied (see discussion above). These are not the same as Applicant's annotations that are added by the user (page 16, lines 12-15). These required elements of claim 9 are not taught or suggested by Lobod.

Claim 11 Not Anticipated or Rendered Obvious by Lobodzinski

54. Claim 11 is dependent on claim 1 and should be allowable for all the reasons stated regarding claim 1.

55. Claim 11 describes a novel feature wherein the user, who is at the receiving end of the transmission, is monitored (inherently by the receiving device) to determine if he is viewing a particular image in the received video stream. The remote viewer essentially marks the portion of interest (in this case an image) by lingering on that image, and the system automatically transmits that image in the second format. Lobod does not teach nor suggest the required elements of claim 11.

Claim 12 Not Anticipated or Rendered Obvious by Lobodzinski

56. Claim 12 is dependent on claim 1 and should be allowable for all the reasons stated regarding claim 1.

57. Claim 12 describes a novel feature where upon receiving the request for an enhanced version of a marked portion from the receiving device, the system automatically stops transmitting the video in the first format while it sends the requested marked portion in the second format and then resumes transmission in the lower quality first format. As discussed above, Lobod does not clearly teach transmission in two formats, the "request for an enhanced

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version", or that any of the complexity of the system required to pause the transmission of the first format while a requested portion in the enhanced format is transmitted. Lobod does not teach nor suggest the required elements of claim 12.

Claims 13-15, 17, and 19-21 Not Anticipated or Rendered Obvious by Lobodzinski

58. The office action rejects claims 13-15, 17, and 19-21 by equating the transmitting device with the DIS 17 or US 200. For all the reason stated above, the strained interpretations is improper. The DIS 17 or US 200 is a source device and not a transmitting device for transmitting to a receiving device as required by these claims. Further as required by claim 15 the source device, which is a distinct element of the claim language from the transmitting device, is a medical test device such as an ultrasound device, so equating DIS 17 or ultrasound 200 with the transmitting device is improper.

59. As stated above, claim 13 contains many distinct elements not taught or suggested by Lobod. Applicant submits that claim 13 and all of its dependent claims are allowable over Lobod.

60. Further claims 13-15, 17, and 19-21 contain many distinct elements such as "controller coupled to the storage device and configured for coupling to the receiving device for controlling transmission" with its other limitations.

Claims 16 and 18 Not Anticipated or Rendered Obvious by Lobodzinski

61. Claims 16 and 18 dependent on claim 14 and 17, respectively, and for all the reasons stated above should be allowable.

62. Regarding claim 16 and 18, the office action acknowledges that these elements are required as part of the transmitting device of the claims, which supports applicant's

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arguments regarding claims 1 through 12 that the MVTS is not a receiving device as required by those claims.

Claims 22-28 and 29-35 Not Anticipated or Rendered Obvious by Lobodzinski

63. As stated above, independent claims 22 and 29 each contain many distinct elements not taught or suggested by Lobod. Applicant submits that claims 22 and 29 and all of their dependent claims are allowable over Lobod.

64. The office action rejects claims 22-28 and 29-35 by generically applying the reasons associated with claims 1-21. However, as discussed above, a thorough analysis of claims 22 and 29, shows that Lobod fails to teach each and every required element.

65. Further, claims claims 22-28 and 29-35 contain many distinct elements such as the receiving device with its distinct "received storage device" (claim 26, 27) and its other limitations. As discussed above, Lobod fails to clearly teach the structure or function of its "remote computer". It is not clear from Lobod that the remote computer has a "received storage device" that is configured to store portion of video in both a first and a second format.

The undersigned respectfully submits that, in view of the foregoing remarks, the present application is believed to be in condition for allowance. It is respectfully requested that this application be considered and that this case be passed to issue. If it is believed that a telephone conversation would expedite the prosecution of the present application, or clarify matters with regard to its allowance, the Examiner is invited to call the undersigned at 408-739-9517.
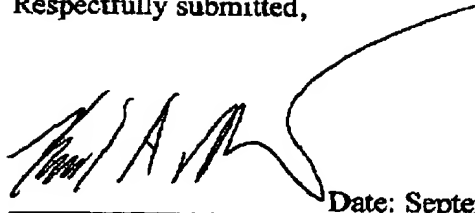
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Respectfully submitted,

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